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1. Mashinno-elektrotekhnicheski institut.

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Influence of geometric factors determining the precision of the universal triple-jaw chuck of the Y-190 type. Mashinostroene 12 no. 11:12-15 N '63.

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1. Chlen na Redaktsionnata kolegiia, "Mashinostroene" (for Bekiarov).

VULEV, Vasil N., inzh.

Conditions indispensable for an easy setting in the motion of automotive vehicles in winter. Transp delo 6 no.7:40-47 '54.

1. Starshi inzhener pri upravlenie Avtomobilen transport.

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GAVRA, Dmitriy Lazarevich; GORSHKOV, D.S., doktor fiz.-mat. nauk, retsenzent; VUL'F, A.M., doktor tekhn. nauk, red.; YURKEVICH, M.P., inzh., red. izd-va; PETERSON, M.M., tekhn. red.

[Fundamentals of nomography with examples in mechanical engineering]Osnovy nomografii s primerami iz mashinostroeniia. Izd.2. Moskva, Mashgiz, 1962. 162 p. (MIRA 15:10)
(Nomography (Mathematics)) (Mechanical engineering)

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Author: Vul'f, A. M.

Title: A high speed grinding method. (Skorostnoe shlifovanie.) 112 p.

City: Moscow
Publisher

~~Publication~~: State Scientific and Technical Printing House pertaining to Machine Construction Literature.

Date: 1948

Available: Library of Congress

Source: Monthly List of Russian Accessions, Vol. 3, No. 8, Page 539

VUL'F, A.M., A. SH. SHIFRIN and I.M. SHATSMAN.

Skorostnoe tochenie. Moskva, Mashgiz, 1948. 142 p. illus.
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326 p. diagrs., tables.
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(Cutting tools) (Turning)

VUL'F, A.M.

VUL'F, A.M.; RUDNIK, S.S., professor, retsenzent; MOROZOV, V.D., kandidat tekhnicheskikh nauk, redaktor; PETERSON, M.M., tekhnicheskiy redaktor

[Principles of metal cutting] Osnovy rezaniia metallov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1954. 326 p. (MLRA 8:4)
(Metal cutting)

VUL'F, A.M.

[Principles of metal cutting] Osnovy rezaniia metallov. Moskva, Mashgiz, 1954. 327 p. (MLRA 8:1D)

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SHIFRIN, Abram Shmerovich,; LEVIN, Boris Gustavovich,; LIVSHITS, Il'ya Iosifovich,; PISAREVSKIY, Moisey Isaakovich,; PEPELOV, Nikolay Aleksandrovich,; LOMANCHENKOV, S.E., inzh.,red.; VUL'F, A.M., kand. tekhn. nauk, retsenzent,; MOROZOV, V.D., kand. tekhn. nauk, red.; BORODULINA, I.A., red. izd-va,; POL'SKAYA, R.G., tekhn. red.

[Highly productive cold working of metals] Vysokoproizvoditel'naia kholodnaia obrabotka metallov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 294 p. (MIRA 11:12)
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PHASE I BOOK EXPLOITATION 988

Vul'f, Adol'f Matveyevich

Rezaniye metallov mineralokeramicheskimi reztsami (Cutting of Metals By Means of Ceramic Tools), Moscow, Mashgiz, 1958. 182 p. 6,000 copies printed.

Reviewer: Rudnik, S.S., Professor; Ed.: Lifshits, I.I., Candidate of Technical Sciences; Ed. of Publishing House: Leykina, T.L.; Tech. Ed.: Sokolova, L.V.; Managing Ed. for literature on machine-building technology (Leningrad Division, Mashgiz): Naumov, Ye.P., Engineer.

PURPOSE: This book is intended for engineers, technicians, and scientific personnel working in the field of metal cutting.

COVERAGE: The author gives a systematic presentation of the results of his extensive investigations of the process of cutting with ceramic tools. Achievements in this field, both in the USSR and elsewhere, are described. Results of the investigations are analyzed and generalized on a physical basis, and practical suggestions for selecting cutter geometry and cutting regimes are offered. There are 95 references, of which 59 are Soviet, 19 English, 15 German, and 2 French.

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Cutting of Metals By Means of (Cont.)

TABLE OF CONTENTS:

Cutting of Metals By Means of (Cont.)

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Cutting of Metals By Means of (Cont.)

AVAILABLE: Library of Congress

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REZNITSKIY, Lev Mikhaylovich, kand.tekhn.nauk; YUL'F, A.M., dotsent, kand.tekhn.nauk, retsenzent; MOROZOV, V.D., kand.tekhn.nauk, retsenzent; MAYDEL'MAN, E.D., inzh., red.; BORODULINA, I.A., red.izd-va; LEYKINA, T.L., red.izd-va; SOKOLOVA, L.V., tekhn.red.

[Mechanical treatment of tempered steel] Mekhanicheskaia obrabotka zakalennykh stalei. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 398 p. (MIRA 12:1)
(Steel) (Metal cutting)

VUL'F, A. M.: Doc Tech Sci (diss) -- "Investigation of the process of cutting with mineral-ceramic cutters". Leningrad, 1958. 26 pp (Min Higher Educ USSR, Leningrad Polytech Inst im M. I. Kalinin), 150 copies (KL, No 5, 1959, 148)

KUDASOV, Grigoriy Filippovich; PANOV, A.A., inzh., retsenzent; VUL'F, A.M., kand.tekhn.nauk, red.; VAKHOVETSKAYA, A.I., red.izd-va; SHCHETININA, L.V., tekhn.red.

[Flat-surface grinding] Ploskoe shlifovanie. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 77 p. (Biblio-techka shlifovshchika, no.5). (MIRA 13:11)
(Grinding and polishing)

VULF, A.M.; PODPORKIN, V.G., prof., doktor tekhn. nauk, retsenzent; LIFSHITS, I.I., kand. tekhn. nauk, red.; KUREPINA, G.N., red.izd-va; SPERANSKAYA, O.V., tekhn. red.

[Metal cutting] Rezanie metallov. Moskva, Mashgiz, 1963. 427 p. (MIRA 16:9)
(Metal cutting)

VAKSER, O.B.; VUL'F, A.M., doktor tekhn. nauk, retsenzent; MIRKIN, M.S., inzh., red.

[Means for increasing the efficiency of abrasive tools in grinding] Puti povysheniia proizvoditel'nosti abrazivnogo instrumenta pri shlifovanii. Moskva, Mashinostroenie, 1964. 121 p. (MIRA 17:8)

ACC NR: AP6027259 (A) SOURCE CODE: UR/0097/66/000/006/0002/0006

AUTHOR: Litvin, A. M. (Candidate of technical sciences); Vul'f, A. R. (Engineer)

ORG: None

TITLE: Polymer-reinforced-concrete pipes and the prospects for their applications in civil engineering

SOURCE: Beton i zhelezobeton, no. 6, 1966, 2-6

TOPIC TAGS: civil engineering, reinforced concrete, polyethylene, polypropylene, polyvinyl chloride, WATER PIPE, PIPE

ABSTRACT: The design and tests of new composite pipes consisting of a coaxial arrangement of an interior polymer tubing anchored from inside to an exterior reinforced-concrete pipe are described. The arrangement is schematically shown in a cross-section drawing. The pipes are made in diameters from 300 to 2000 mm. Polyethylene polymers are usually employed for cold-water pipes while polyvinyl chlorides and other similar products are used for gas and hot-liquid conduits. The use of polymer materials assures a smooth impervious surface resisting well to wear, chemical and corrosive actions. The machining of corrugated outside surfaces of polymer tubes for increasing the binding adhesion to concrete is described and illustrated. Some other methods of assembling coaxial composite pipes are also reviewed and demonstrated in photos. The decline of tensile strength of

Card 1/2 UDC: 621.643.29

ACC NR: AP6027259

polyethylenes with time (up to 50 years) at various temperatures is illustrated in a graph. The composite pipes were successfully tested for watertightness at a pressure of about 23 atm in spite of the presence of fissures in the concrete enclosure. In connection with such a high imperviousness, it is mentioned that a less expensive non-prestressed concrete can be used. The pipes were also tested for simultaneous actions of inside pressures and outside loads. The test arrangement and measurements of stresses are described and illustrated. The use of such composite pipes for industrial and agricultural applications is recommended. However, it is mentioned in the editor's note that the problem of aging of polymer materials in fissured concretes was not investigated by the authors. Thus, the life expectancy of composite pipes is left undetermined. Orig. art. has: 6 photos, 3 diagrams.

SUB CODE: 11, 13/ SUBM DATE: None

Card 2/2

VUL'F, A.S., (Leningrad).

Aids for technical education. Det. khor. igr. no.1: 21-26 '55. (MLRA 10:2)

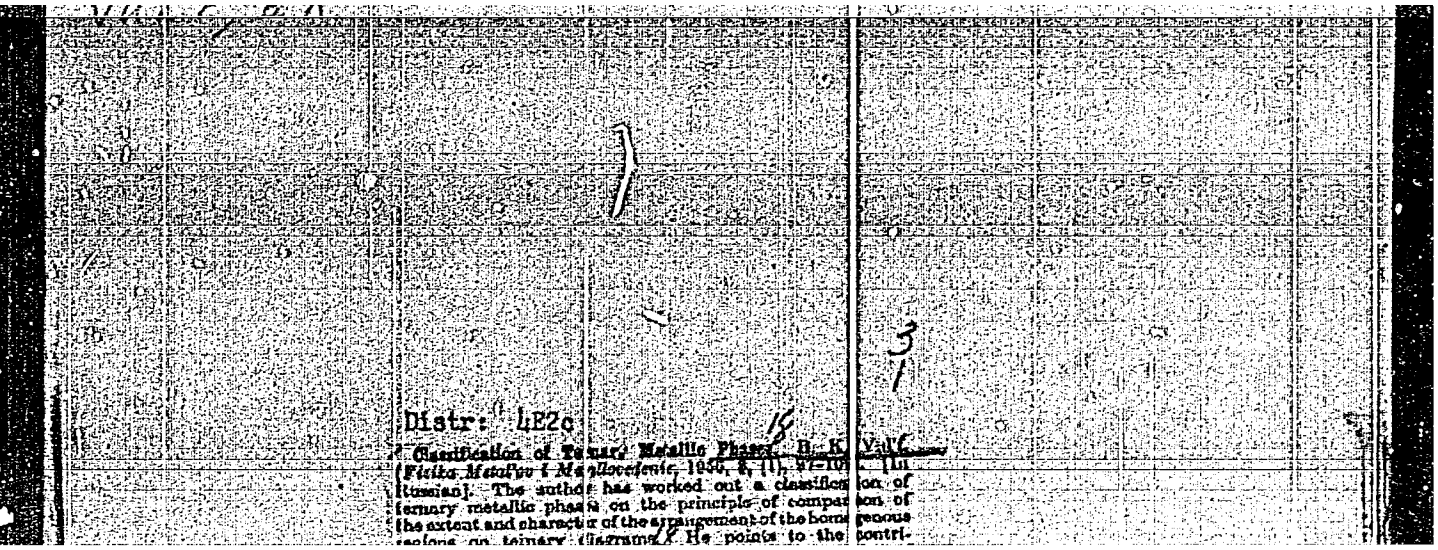
(Toys) (Technical education)

VUL'F, Anatoliy Semenovich; VUL'F, Leonid Anatol'yevich; MOROZOV, I.A., red.; GUSHCHINA, R.N., red. izd-va; GRECHISHCHEVA, V.I., tekhn. red.

[How to make furniture yourself]Kak izgotovit' mebel' samomu. Moskva, Goslesbumizdat, 1962. 42 p. (MIRA 15:9)
(Furniture)

VILF, B. K.

Influence of the ternary compound [illegible] (on the) heat resistance of aluminum alloys. B. K. Vul'f and M. N. Chernov. *Zhur. Neorg. Khim.* 1, N[illegible] (1956). — The hardness of the ternary compd. CrMgAl (I) at 20° and 300° has shown but little decrease when held, loaded, for considerable time at high temp.; this indicates a high resistance to creep of I. The addn. of I in to 20% by wt. of I was investigated for influence on short-time strength of Al alloys at 300° under tension. With increasing content of I the limit of strength increases while the plasticity, expressed as the relative transverse reduction in area remains high, up to about 5% of I, after which it falls rapidly. A sharp increase in long-time strength for alloys contg. about 5.2% of I can be explained by the nearness of this compn. to the satn. limit of the solid soln. Alloys contg. 0.63% Cr and 2.40 Mg have high long-time strength of 4.7 kg./sq. mm. and are of practical interest. V. H. Gottschalk



Distr: 4E2c

Classification of Ternary Metallic Phases. N. K. Val'
(*Fizika Metallov i Metallovedenie*, 1956, 3, (1), 97-10
[Russian]. The author has worked out a classifica on of
ternary metallic phases on the principle of compar on of
the extent and character of the arrangement of the bou geous
regions on ternary diagrams. He points to the contri-

VUL'F, B.K.

Category : USSR/Solid State Physics - Mechanical Properties of Crystals and Crystalline Compounds E-9

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6814

Author : Vul'f, B.K., Shokalov, N.F.
Title : Strengthening of Aluminum and Magnesium Based Alloys by Triple Metallic Compounds

Orig Pub : Izv. Sektora fiz.-khim. analiza IONKh AN SSSR, 1956, 27, 198-208

Abstract : A study was made of the influence of triple metallic compounds on the mechanical properties of light alloys for the purpose of determining the possibility of obtaining a similar type of alloy for practical use. Results are given on the investigation of the following systems: Al-Cu-Mg, Al-Mg-Zn, Al-Cu-Ni, Al-Cu-Mn, Al-Mn-Ni, Mg,Cu-Zn, Mg-Ca-Zn, Mg-Al-Li. It is shown that the addition of triple metallic compounds in cast aluminum and pressed magnesium alloys increases their hardness and strength. The plasticity of the alloy diminishes with increasing content of the triple com-

Card : 1/2

AUTHORS: Vul'f, B.K., Chernov, M.N.

SOV/149-58-4-21/26

TITLE: Improving the Strength of Wrought Aluminium Alloys by Alloying Additions which Form Ternary Intermetallic Compounds (Uprochneniye deformirovannykh alyuminiyevykh splavov troynymi metallicheskimi soyedineniyami)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, 1958, Nr 4, pp 153-164 (USSR)

ABSTRACT: In continuation of their earlier work reported elsewhere (Ref.1-3), Vul'f and Chernov investigated the mechanical properties (ultimate tensile strength σ_B, proof stress $\sigma_{0.2}$, Brinell hardness H_B, and elongation δ) and age-hardening characteristics of several Al-base ternary alloys belonging to systems in which ternary intermetallic compounds are formed. All the investigated alloys (whose chemical composition is given in a table on p 154) consisted of two phases: The α (Al-base ternary solid solution) phase and the appropriate ternary intermetallic compound.

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Improving the Strength of Wrought Aluminium Alloys by Alloying Additions Which Form Ternary Intermetallic Compounds

The compounds, with their maximum content in the studied alloys given in brackets, are listed below. $Cu_2Al_{20}Mn_3$ (20%), Cu_3Al_6Ni (31%), $Mg_4Zn_3Al_3$ (32%), $Mg_2Al_{12}Cr$ (12%), $Al_9Si_3Mn_4$ (17%), $Al_{60}Mn_{11}Ni_4$ (16%) and Al_9FeNi (13%). The micro-hardness values of these compounds are given in a table on p 154. The experimental alloys were melted under cover of a protective flux, held for 20-60 minutes at a temperature 100-150°C above their melting points and cast into steel moulds preheated to 250°C. The billets were then extruded at 320°C - 450°C into 11 mm diameter rod from which the tensile test pieces were prepared. All the investigated materials were tested (a) in the as extruded condition, (b) after a solution treatment (2 hrs at 400°C-600°C followed by quenching), and (c) after ageing at 180-200°C for 30 hrs. The results showing the effect of the content of the intermetallic

Card 2/4 compounds on the properties of the Al alloys are

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reproduced graphically on Fig.2-9. It was found that in all the investigated systems σ_B, $\sigma_{0.2}$, and H_B increase and δ decreases when the content of the appropriate intermetallic compound is increased. This effect is most pronounced in the Al-$Mg_4Zn_3Al_3$ system. As regarding their mechanical properties, the alloys of this type are superior to those of the "Duralumin" type alloys, the typical values for the extruded materials being: $\sigma_B \cong 60$ kg/mm^2; $\sigma_{0.2} \cong 30$ kg/mm^2; $H_B \cong 150$; $\delta \cong 5\%$. After the solution treatment (quenching from 400-600°C) $\sigma_{0.2}$ decreased in every case; σ_B and H_B were decreased in a majority of cases, while δ generally increased. These changes are attributed to the fact that the internal stresses and work-hardening effects resulting from extrusion are removed by the solution treatment. Some of the alloys (Al-Cu_3Al_6Ni, Al-$Mg_4Zn_3Al_3$) in which the solid solubility of the ternary compound in Al increases with rising temperature, can be age-hardened (Fig.3, 4, 5). Thus, the mechanical properties of the

Improving the Strength of Wrought Aluminium Alloys by Alloying Additions which form Ternary Intermetallic Compounds

solution treated alloy containing 32% $Mg_4Zn_3Al_3$ were: $\sigma_B \cong 35$ kg/mm^2; $\sigma_{0.2} \cong 25$ kg/mm^2; $H_B \cong 100$; $\delta \cong 11\%$. After age-hardening treatment these values changed to 60 kg/mm^2, 55 kg/mm^2, 210 and 1% respectively. There are 9 figures, 2 tables and 17 references of which 5 are Soviet, 6 German and 6 English.

ASSOCIATION: Moskovskiy Aviatsionnyy Institut (Moscow Aviation Institute)

SUBMITTED: 3rd June 1958.

SOV/149-58-5-13/18

AUTHORS: Vul'f, B.K. and Chernov, M.N.

TITLE: Corrosion Resistance of Aluminium Alloys Containing Ternary Intermetallic Compounds (Korrozionnaya stoykost' splavov alyuminiya s troynymi metallicheskimi soyedineniyami)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, 1958, Nr 5, pp 116 - 123 + 1 plate (USSR)

ABSTRACT: Of the ternary Al-based alloys, those forming pseudo-binary systems Al-ternary intermetallic compound are of particular interest. Owing to the high strength and heat-resisting properties of some of the ternary intermetallic compounds and to the fact that their solid solubility in the Al-rich phase usually changes with temperature, alloys of this type are often characterised by good mechanical properties, both at low and elevated temperatures. The object of the present investigation was to study the corrosion resistance of seven groups of Al alloys containing the following alloying elements: 1) Cu and Ni; 2) Cr and Mg; 3) Fe and Ni; 4) Cu and Mn; 5) Mn and Ni; 6) Mn and Si and 7) Mg and Zn. The composition of the experimental alloys is given in

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Table 1, where the content both of the alloying elements and of the appropriate intermetallic compounds is shown (the characteristics of the metals used and the method of preparation of the alloys were described elsewhere - Ref 4). In order to improve the cast structure of the alloys, the ingots were first machined to 32 mm diameter and then extruded at 320 to 450 °C (speed of extrusion - 6 to 7 mm/sec) to produce 11 mm diameter rods which were used for the preparation of the experimental test pieces. These were then heat-treated, the optimum conditions of the heat treatment having been determined previously. All alloys were quenched from temperatures 20 to 30 °C below the solidus and those in which the solid solubility of the intermetallic compound varied with temperature were age-hardened by holding at 180 °C for 30 hours (alloys Al-Al_6Cu_3Ni) or at 100 °C for 47 hours (alloys Al-$Al_3Mg_4Zn_3$). The corrosion resistance of various alloys was assessed by comparing the ultimate tensile strength σ_B (kg/mm^2) and elongation δ(%) of uncorroded test pieces with the

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same two properties (denoted by σ_B' and δ') of specimens that had been subjected to corrosion tests. The corrosion tests were carried out at 20 °C and consisted of immersing the specimens for 7 days in a 3% aqueous solution of NaCl containing 0.1% H_2O_2. The results are reproduced graphically in Figures 1 to 7, where the values of σ_B, δ, σ_B' and δ' of the alloys of each of the seven investigated systems are plotted as a function of the content of the appropriate ternary intermetallic compound. It was found that some alloys (Al-Cr-Mg and Al-Mn-Si) corroded uniformly (Figure 8), some (Al-Mn-Ni and Al-Fe-Ni alloys) were subject to pitting corrosion (Figure 9), while in the case of alloys Al-Cu-Ni, Al-Cu-Mn and Al-Mg-Zn, intergranular corrosion occurred (Figures 10,11). The following conclusions were reached. The degree of the relative deterioration of the mechanical properties of the investigated alloys depends on the nature of the corrosive attack and on the amount of the intermetallic compound

Corrosion Resistance of Aluminium Alloys Containing Ternary Intermetallic Compounds

present in a given alloy. When intergranular corrosion occurs (systems Al-Al_6Cu_3Ni, Al-$Al_{20}Cu_2Mn_3$ and Al-$Al_3Mg_4Zn_3$), the decrease in the ultimate tensile strength is most pronounced and becomes larger with the increasing content of appropriate intermetallic compounds. Alloys of the systems Al-$Al_{12}CrMg_2$ and Al-$Al_9Mn_4Si_3$ corroded uniformly and to a lesser extent than other investigated alloys. The effect of corrosion on the mechanical properties of these alloys was comparatively small and in this respect they compared favourably with the standard Al-based alloys B95 (Cu 1.62, Zn 6.15, Mg 2.34, Cr 0.20, Mn 0.40, Fe 0.32 and Si 0.44%) and D16 (Cu 4.2, Mg 1.6, Mn 0.65, Fe 0.4, Si 0.35%). In the case of the experimental Al-Cr-Mg and Al-Mn-Si alloys, the ultimate tensile strength of the corroded specimens decreased by 5.7% and their ductility by 16.7%. The corresponding figures for the B95 alloy were 6.0 and 34.8% and for the D16 alloy 6.4 and 22.5%.

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SOV/149-58-5-13/18

Corrosion Resistance of Aluminium Alloys Containing Ternary Intermetallic Compounds

There are 11 figures, 1 table and 4 Soviet references.

ASSOCIATION: Voyenno-vozdushnaya inzhenernaya akademiya im. prof. N.Ye. Zhukovskogo i Moskovskiy aviatsionnyy institut (Air Force Engineering Academy imeni Prof. N.Ye. Zhukovskiy and Moscow Aviation Institute).

SUBMITTED: April 4, 1958

Card 5/5

SOV/136-59-9-19/25

AUTHORS: Vul'f, B.K. and Shikalov, N.P.

TITLE: Work on an Experimental Installation for Melting Magnesium Alloys in an Argon Atmosphere

PERIODICAL: Tsvetnyye metally, 1959, Nr 9, pp 75-78 (USSR)

ABSTRACT: The disadvantage of melting under a flux is that inclusions of chlorides and fluorides can be obtained in the metal. Vacuum melting of magnesium is difficult because of its high vapour pressure. Work was therefore carried out on melting under an atmosphere of argon. The argon must be purified because it contains 0.05% oxygen and 0.23% nitrogen. Fig 1 shows a diagram of the method of melting. Argon from a cylinder (1) passes through two purifiers containing calcium (2) and lithium (3) and into a melting furnace (4). The air is removed from the apparatus by a vacuum pump (5). Fig 2 shows the construction of the actual furnace. The body of the furnace (12) is made from steel. The crucible (9) and the mould (14) can be heated and the temperatures are controlled by thermocouples. Provision is made for stirring the melt and for pouring into the mould (at about 200 to 250°C). The vacuum pump type VN461-M is

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used and before filling the furnace with argon, it is at a pressure of (4 - 6) x 10^{-2} mm mercury. This apparatus has been used for making magnesium alloys containing lithium, copper, calcium, zinc and aluminium. They are characterized by dense structures and clean surfaces. The composition hardly varies from the nominal. There are 2 figures and 4 Soviet references.

Card 2/2

5 (2)

AUTHORS: Kornilov, I. I., Vul'f, B. K.

SOV/74-28-9-4/7

TITLE: Metallic Compounds

PERIODICAL: Uspekhi khimii, 1959, Vol 28, Nr 9, pp 1086-1113 (USSR)

ABSTRACT: In the present paper the authors want to show by means of some examples the wide distribution of metallic compounds in alloys, they also refer to the importance of a further development of this branch of inorganic chemistry. The paper begins with brief historical survey on the origin of metallic compounds (Refs 1-16). This introduction is followed by classification and description of the physico-chemical nature of these compounds (Refs 10, 15, 17-42), as well as by a description of the conditions under which the metallic compounds are formed, in particular in regard to their solid solutions (Refs 12, 15, 43-48), whereupon the general properties of these compounds are set forth (Refs 49-55). To give a general characteristics of these compounds it is recommen to subdivide them into specific groups having certain features in common, e.g. on the basis of similar crystal structures, or their genetic relationship as reflected by their conditions of origin and formation. The authors describe certain characteristics of the origin within the frame

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of the different groups and lay stress on the modifications of their composition and properties according to the position of the elements within the periodic system. Such compounds are the following: compounds according to Kurnakov (Refs 56-111), metallic compounds with the valency correspondence to the atoms (Refs 43, 52, 112-116); electron bonds; (Refs 16, 117-121), metal bonds of the type of the phases according to Laves (Refs 122-126); bonds of the type of nickel-arsenic phases (Refs 127-129); hydrides (Refs 19, 133-137), borides (Refs 138-141), carbides (Refs 142-152); silicides (Refs 153-155), and nitrides (Refs 156-159). The origin of the Kurnakov compounds is highly interesting as the chemical interaction between the metals becomes clearly apparent. These examples cannot any more be considered as exceptions, but as typical, regular results of transformations, taking place during the cooling of the majority of the solid solutions. As the authors emphasize that many alloys are gaining in practical importance in view of their particular, highly valuable properties such as a high degree of hardness, thermal stability, chemical stability, resistance to corrosion. This refers also to magnetic and properties (semi conductors), and the like. A step further leads us to the use of metallic

compounds as independent bases for the development of new alloys. Further researches in the field of binary, ternary, and even higher metallic compounds on the basis of the periodic system of Mendeleyev might greatly help in revealing the chemical nature of these compounds so as to enlarge the field of practical use. If the researches were to bring to light certain regularities or natural laws in certain groups, this might permit to predict the appearance of such rules also in still uninvestigated domains of binary, ternary, and even higher systems. One of the most characteristic features of the metals and the metallic compounds is their capability to form solid solutions with one another and with other metals. Such solid metallic solutions on the basis of these compounds, may consist of a great number of components. They are the chief components in the composite multi-component metallic alloys. Thanks to this fact it is possible to simplify substantially the analysis of composite systems by dividing them into simple components in which the double compounds are independent components. The following Soviet authors are mentioned: Y. I. Mikheyeva, G. B. Bokiy, P. I. Kripyakevich, Ye. Ye. Cherkashin, N. V. Ageyev, Ye. S. Makarov, Ye. M. Savitskiy, A. F. Ioffe, S. T.

Konobeyevskiy, Dzh. Bernal, I. 3. Gayev. There are 13 figures, 2 tables, and 159 references, 90 of which are Soviet.

ASSOCIATION: Voyenno-vozdushnaya inzhenernaya Akademiya im. N. Ye. Zhukovskogo (Military Academy of Aviation-engineers imeni N. Ye. Zhukovskiy)

VUL'F, B.K.; CHERNOV, M.N.

Effect of ternary metallic compounds on the heat resistance of deformed aluminum alloys. Izv.vys.uchab.zav.; tsvet.met. 3 no.2:147-152 '60. (MIRA 15:4)

1. Voyenno-vozdushnaya inzhenernaya akademiya i Moskovskiy aviatsionnyy institut.
(Aluminum alloys—Thermal properties)
(Intermetallic compounds)

L 8770-65 EWT(m)/T/EWP(b) ASD(m)-3 MJW/JD

ACCESSION NR: AT4007012 S/2598/63/010/010/0207/0213

AUTHOR: Vul'f, B. K.; Yudina, S. A. B

TITLE: Effect of heat treatment on the mechanical properties of AT-3, AT-4, AT-6, and AT-8 titanium alloys

SOURCE: AN SSSR. Institut metallurgii, Titan i yego splavy*, no. 10, 1963. Issledovaniya titanovykh splavov, 207-213

TOPIC TAGS: titanium alloy, AT titanium alloy, AT-3 titanium alloy, AT-4 titanium alloy, AT-6 titanium alloy, AT-8 titanium alloy, heat treatment, mechanical property

ABSTRACT: The effect of quenching temperature and of the duration and temperature of aging on the phase transformations, microstructure, and mechanical properties of AT-3, AT-4, AT-6, and AT-8 Ti alloys was studied in a continuation of the investigations of the 6-component system Ti-Al-Cr-Fe-Si-B carried out by I. I. Kornilov. The original specimens of the alloys tested were melted twice in a vacuum arc furnace and hot worked at temperatures of 840-870 and 1050-1080C. In all of the original specimens, α and α' phases with some β phase were found. After quenching from temperatures below the point of incipient phase transformation, the original structure was not affected, but its tensile strength decreased due to α'-α trans-

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ACCESSION NR: AT4007042 2

formation. As the quenching temperature increased up to 950C, the tendency toward spheroidization of the plates of the α phase increased. At quenching temperatures above 975C, the β phase was partially transformed into a martensite-like α' phase. The microstructure of the AT-6 alloy quenched at various temperatures or cooled in air is shown in the original. The mechanical properties (stress rupture strength, hardness, and impact strength) of all alloys tested, quenched from 700-1150C followed by aging at 400, 450, and 550C for up to 100 hours, were unaffected by these processes. The reduction in area increased as the quenching temperature increased up to 850-875C (that is, close to the line of the biphasic area on the equilibrium diagram). When the alloys were quenched from higher temperatures, these values decreased markedly. The stress rupture strength of the quenched alloys increased with the Al content. Except for the alloy AT-3 (with an increased O content), the tested alloys were not made brittle by the aging process. "The experimental alloy AT-6 was prepared under the direction of V. S. Mikheyev." Orig. art. has: 6 figures and 2 tables.

ASSOCIATION: Institut metallurgii AN SSSR (Institute of Metallurgy AN SSSR)

SUBMITTED: 00 ENCL: 00

SUB CODE: MM NO REF SOV: 005 OTHER: 000

Card 2/2

80969

S/074/60/029/06/04/005
B022/B003

18.1000

AUTHOR: Vul'f, B. K.

TITLE: Ternary Metallic Compounds

PERIODICAL: Uspekhi khimii, 1960, Vol. 29, No. 6, pp. 774-795

TEXT: Hitherto a great number of metallic compounds consisting of two elements, i.e., binary metallic compounds have been investigated. The ternary systems have remained less investigated. Various phases consisting of one to three elements may form in these systems. The author (Ref. 5) elaborated a classification of the ternary metallic phases, which is based on a comparison of the nature and the extension of the homogeneous zones in the ternary phase diagram. Those ternary phases are the most interesting which are characterized by ranges of homogeneity in the ternary phase diagrams, and which degenerate to points if the excess components cannot be dissolved. These phases, which are usually characterized by special types of crystal lattices and special properties, are chemically independent single compounds according to N. S. Kurnakov, and are termed ternary metallic compounds. The present paper deals with

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phases of similar type. Ternary phases forming continuous solid solutions between two binary metallic compounds have to be specially pointed out. They are also discussed in the article under review. The first chapter contains the general characteristics of ternary metallic compounds such as stability, chemical nature of the component elements, valence-electron concentration, and the ratios between the dimensions of atoms (ions). The crystal lattices of LiMgN and LiZnN are given in Fig. 1. Further, the crystal lattices of NiMnSb and Ni_2MnSb (Fig. 2) as well as $CuMgAl_2$ (Fig. 3) are illustrated. The Brillouin zones for structures of the ternary metallic compound $MnSiAl_9$ and the binary compound Co_2Al_5 are shown in Fig. 4. The ternary Kurnakov phases are dealt with in the second chapter. The phase diagram of the alloys Pt-CuFe leading to the formation of a ternary Kurnakov metallic compound $CuFePt_2$ is graphed (Fig. 5). A graph is also given of the metallic compounds in the system Fe - Co - Ni (Fig. 6) and Cu - Fe - Ni (Fig. 7), of the continuous solid solutions between the compounds FeCr and FeV (σ-phases) (Fig. 8) and $\mu(Co_7Mo_6)$ as well as $\mu(Fe_7Mo_6)$ at 1,200° in the ternary diagram Fe - Co - Mo (Fig. 9). The ternary valence compounds are listed in connection with

the treatment of ternary metallic valence compounds (Table 1). The valence-electron concentration of ternary metallic compounds containing aluminum and transition metals (Fig. 10) is represented in the chapter about ternary metallic electron compounds; also the number of "free" electrons for some metals is given on the basis of magnetic measurements (Table 2). The valence-electron concentration and the crystal lattices of some ternary metallic compounds (Table 3) are represented. The number of "free" electrons for some metals (according to Ref. 38) is indicated as well (Tables 4,5). The continuous solid solutions between binary electron compounds referred to in publications are listed in Table 6. The ternary Laves phases are mentioned in Table 7. The continuous metallic solutions in the system Sb - Fe - Ni are shown in Fig. 11. The composition of the continuous solid solutions between binary metallic compounds of nickel and arsenic is indicated in Table 8. Mention is also made of ternary metallic compounds containing boron (Table 9), carbon (Table 11), silicon (Table 13), and nitrogen (Table 15) as well as of the continuous solid solutions between borides (Table 10), carbides (Table 12), silicides (Table 14), and nitrides (Table 16).

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Ternary Metallic Compounds

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B022/B003

Properties and practical application of ternary metallic compounds are dealt with in the eighth chapter. The coloring of some ternary "valence" compounds is shown in Table 17, the electrochemical potential of some ternary metallic compounds containing magnesium and aluminum in Table 18, the microhardness of some magnesium-containing ternary compounds in Table 19, and the microhardness of some aluminum-containing ternary compounds in Table 20. The microhardness of ternary metallic compounds containing aluminum at 300° is given in Table 21. In addition to magnetic properties and the microhardness of ternary metallic compounds, a description is given of the solidification of solid solutions, the formation of structurally free ternary metallic compounds, the solidification by thermal treatment, and the increase of heat resistance. The influence of temperature on the hardness of some metallic compounds and heat-resistant alloys is graphed in Figs. 12 and 13. The improvement of resistance to corrosion of alloys and the production of alloys with certain physical and technological properties are briefly described. Mention is made of V. A. Nemilov, A. A. Rudnitskiy (Ref. 17), N. V. Grum-Grzhimaylo (Refs. 22-27), I. I. Kornilov (Refs. 56,160-162), M. N.

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Ternary Metallic Compounds

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Chernov (Ref. 125), Ye. M. Savitskiy (Refs 128-131), and Yu. A. Bagaryatskiy (Refs. 149-152). There are 13 figures, 21 tables, and 174 references: 69 Soviet, 53 English, 48 German, 3 Swedish, and 1 French.

ASSOCIATION: Voyenno-vozdushnaya inzhenernaya akademiya im. N. Ye. Zhukovskogo (Air Force Engineering Academy imeni N. Ye. Zhukovskiy)

Card 5/5

BOKIY, G.B.; VUL'F, B.K.; SMIKHOVA, N.B.

Crystal structures of ternary metallic compounds. Zhur. strukt. khim. 2 no. 1:74-111 Ja F '61. (MIRA 14:2)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk, Voyenno-vozdushnaya inzhenernaya akademiya im. N.Ye. Zhukovskogo i Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Metal crystals) (Alloys)

S/598/62/000/007/024/040
D217/D307

18.1285

AUTHORS: Vul'f, B. K. and Yudina, S. A.

TITLE: Heat treatment of alloys AT3 (AT3), AT4 (AT4), AT6 (AT6) and AT8 (AT8)

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. no. 7, Moscow, 1962. Metallokhimiya i novyye splavy, 174-184

TEXT: The influence of heat treatment on the structure and properties of titanium alloys of the 6-component system Ti-Al-Cr-Fe-Si-B was investigated. Ingots 450 kg in weight were melted in a vacuum arc furnace with a soluble electrode and forged at 1200 - 1050°C into rods of 12 x 12 mm cross-section. The structure and properties of the rod material was studied in the as-received condition. The forged rods were cut into portions of 100 mm length, which were heat treated by various methods. The investigation included determination of chemical composition, metallographic analysis and mechanical testing. It was found that optimum mechanical properties

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were obtained after quenching the alloys in air from the α-range, close to the boundary of the two-phase range (α + β). Quenching from the β-range led to a decrease in plasticity of the alloys, particularly after ageing. The following heat treatments are recommended for the alloys: AT3 and AT4 to be heated to 850°C, AT6 to be heated to 900°C and AT8 to be heated to 950°C, followed by cooling in air. In all cases, the heating time at the quenching temperature should be between 30 minutes and 1 hour for thicknesses of up to 12 mm. In the case of both quenched alloys and as-forged ones, an increase in Al content leads to an increase in strength, but to a decrease in plasticity and impact resistance. The influence of oxygen on the mechanical properties of Ti alloys depends essentially on the nature of heat treatment. For the estimation of the influence of heat treatment and the degree of gas saturation of Ti alloys on their mechanical properties, the percentage reduction in area should be used as the property most sensitive to changes in structure and composition of these alloys. There are 8 figures and 2 tables.

Card 2/2

VUL'F, Boris Konstantinovich, KORNILOV, I.I., prof. dokt. khim. nauk, retsenzent; KOLOBNEV, I.F., doktor tekhn. nauk, retsenzent

[Ternary metal phases in alloys] Troinye metallicheskie fazy v splavakh. Moskva, Metallurgiia, 1964. 221 p. (MIRA 17:11)

PHASE I BOOK EXPLOITATION SOV/6233

Vul'f, Boris Konstantinovich, and Konstantin Platonovich Romadin

Aviatsionnoye metallovedeniye (Aircraft Metal Science). 2d ed., rev. and enl. Moscow, Oborongiz, 1962. 503 p. Errata slip inserted. 10,000 copies printed.

Ed. (title page): I. I. Kornilov, Professor; Reviewer: G. N. Dubinin, Candidate of Technical Sciences; Ed. of Publishing House: S. I. Vinogradskaya; Tech. Ed.: N. A. Pukhlikova; Managing Ed.: S. D. Krasil'nikov, Engineer.

PURPOSE: This book is intended for students of higher schools of aircraft engineering; it will also be helpful to engineers, personnel of scientific research institutes and industrial aircraft laboratories, etc.

COVERAGE: The book deals with new standard and prospective aircraft metals and alloys, modern research methods, the theory of dislocations, and data on the influence of radiation on the

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structure and properties of materials. Data on the composition and properties of aircraft steels (carbon, alloy, heat-resistant, stainless, etc.) and nonferrous alloys (aluminum, magnesium, titanium, etc.) are given. The theory of metal alloys, phase transformations in heat treatment, and corrosion of metals, as well as the science of strength of materials and plastic deformation, are discussed in detail. No personalities are mentioned. There are 25 Soviet references.

TABLE OF CONTENTS:

L 30371-66 EWT(m)/T/EWP(t)/ETI IJP(c) JH/JD/WB/GD

ACC NR: AT6012382 SOURCE CODE: UR/0000/65/000/000/0138/0142

62
59
B+1

AUTHORS: Tavadze, F. N.; Mandzhgaladze, S. N.; Vul'f, B. K.; Yudina, S. A.; Dashniani, T. S.

ORG:

TITLE: The effect of oxygen content and heat treatment on the corrosion resistance of AT3 and AT8 titanium alloys

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium alloys); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 138-142

TOPIC TAGS: OXYGEN, ALUMINUM CONTAINING ALLOY, titanium alloy, corrosion resistance, corrosion resistant alloy, hydrochloric acid, nitric acid, sulfuric acid / AT3 titanium alloy, AT8 titanium alloy

ABSTRACT: The dependence of the corrosion resistance of titanium alloys with both small and considerable contents of aluminum upon their oxygen content is studied. The range of oxygen content was from 0.1 to 0.43%. The alloys were studied in the initial state and after normal heat treatment. The corrosive media were 5% HNO_3, 30% H_2SO_4, 40% HCl, solutions of tannic, gallic, ani tartaric acids, 5% solutions of NaCl and NaOH, and a humid subtropical atmosphere. In all but the HCl, H_2SO_4, and tartaric acid, the corrosion resistance of the alloys was almost independent of the oxygen content (see Fig. 1). An increase in the oxygen content considerably worsened

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ACC NR: AT6012382

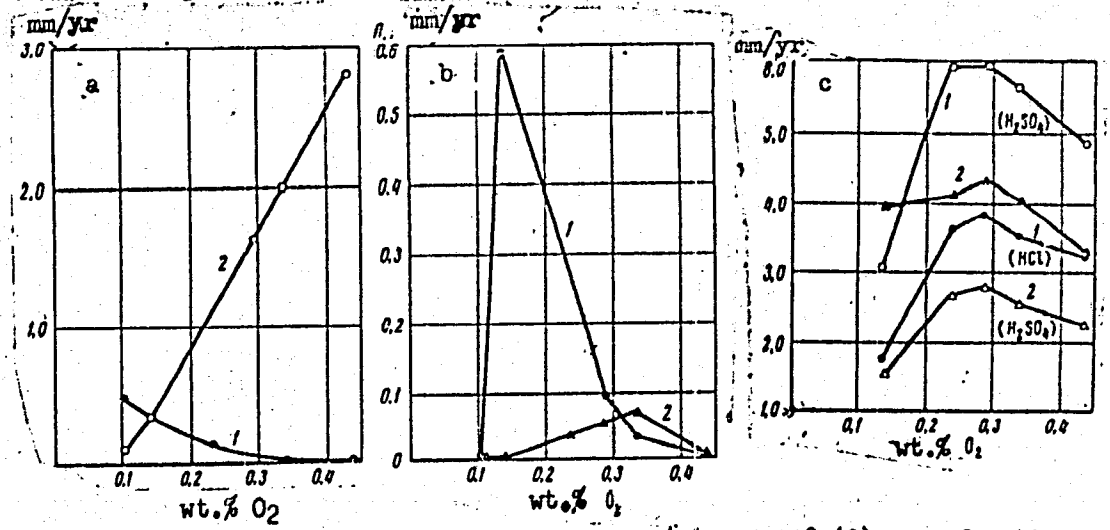

Fig. 1. Corrosion resistance of alloys AT3 (1) and AT8 (2) as a function of oxygen content: a - in 30% H_2SO_4 at room temperature; b - in 40% HCl at room temperature; c - in boiling mineral acids.

the corrosion resistance of AT8 in sulfuric acid (at room temperature) and tartaric acid. In this case, the corrosion resistance of AT3 (with less aluminum) was

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L 30371-66
ACC NR: AT6012302

improved. Aging of AT3 and AT8 after hardening caused a considerable decrease in corrosion resistance. Regardless of the oxygen content and the conditions of heat treatment, the nature of corrosion of the alloy is uniform. Orig. art. has: 5 figures and 1 table.

SUB CODE: 11/ SUBM DATE: 02Dec65/ ORIG REF: 007

Card 3/3 LC

L 16588-65 EWT(m)/EWP(w)/EPF(n)-2/EWA(d)/EPR/EWP(t /EWP(b) Ps-4/Pu-4
IJP(c)/ASD(m)-3 MJW/JD/JG/HLK

ACCESSION NR: AT4018060 S/000 G/64/000/000/0124/0127

B+1

AUTHOR: Vul'f, B.K.; Yudina, S.A.

TITLE: Effect of oxygen on the mechanical properties of heat treated AT3 and AT8 alloys (Preliminary communication)

SOURCE: Soveshchaniye po metallurgii, metallovedeniyu i primeneniyu titana i yego splavov. 5th, Moscow. 1963. Metallovedeniye titana (Metallography of titanium); trudy* soveshchaniya. Moscow, Izd-vo Nauka, 1964, 124-127

TOPIC TAGS: titanium alloy, titanium alloy mechanical property, titanium alloy oxygen treatment, aluminum containing alloy, titanium alloy heat treatment/alloy AT3, alloy AT8

ABSTRACT: According to the Ti-O diagram, oxygen increases the temperature of $\alpha+\beta$ transformation, especially at the critical points in the α-region, showing that oxygen is an α-stabilizer. Due to the complicated processes in the α solid solution of titanium, the stresses are increased, causing plastic deformation of the α solution and hardening. The effect of oxygen on the mechanical properties of titanium and titanium alloys has been investigated in many previous studies, the results of which are reviewed. Generally, an increased hardness and strength, as well as heat resistance and creep resistance, while the relative elongation is lowered somewhat. The VT8 alloy (Ti-Al-Mo) shows higher

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L 16588-65
ACCESSION NR: AT4018060

"hydrogen brittleness" when the oxygen content is increased. The present paper considers the effect of oxygen content on the mechanical properties of two type AT alloys, that with the lowest Al content (AT3) and the highest Al content (AT8). The alloy was melted in an arc furnace charged with pure chromium, iron and silicon, while boron was added as a 10% Cr-B alloy. The oxygen was introduced as powdered TiO_2. The alloys contained an average of 0.7% Cr, 0.4% Fe, 0.4% Si and 0.01% B, while the Al content in AT3 was 3.0% and in AT8 was 7.0%. The amount of oxygen introduced was 0.10, 0.13, 0.23, 0.28, 0.33 and 0.43% by weight. After melting, 12-mm bars were forged under a pneumatic hammer at initial and final forging temperatures of 1000 and 800C for AT3 and 1150 and 900C for AT8. Heat treatment consisted of hardening in air from 850C for AT_3 and from 950C for AT8 during 45 minutes. As shown in Fig. 1 of the Enclosure, the tensile strength increased when the oxygen content was changed from 0.10 to 0.43%, while the plasticity and resiliency dropped, prior to heat treatment. After heat treatment, the results were similar, but less pronounced. The AT8 alloy showed a sharper decrease in plasticity, while the AT3 alloy showed a sharper drop in resiliency. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: none

Card 2/4

L 16588-65
ACCESSION NR: AT4048060

SUBMITTED: 15Jul64 ENCL: 01 SUB CODE: MM

NO REF SOV: 004 OTHER: 004

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L 16588-65
ACCESSION NR: AT4048060

ENCLOSURE: 01

Fig. 1. Effect of oxygen on the mechanical properties of alloys AT 3 and AT8: 1 – alloy AT5 in the initial state; 2 – alloy AT3 after quenching from 850C and cooling in air; 3 – alloy AT8 in the initial state; 4 – alloy AT8 after quenching from 950 and cooling in air.

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L 16595-65 EWT(m)/EWA(d)/T/EWF(t)/EWP(k)/EWP(b) Pf-4 IJP(c)/ASD(m)-3 MJW/JD/HW/MLK

ACCESSION NR: AT4048084 S/0000/64/000/000/0263/0272

AUTHOR: Yudina, S.A., Vul'f, B.K. 37

TITLE: Some peculiarities of the heat treatment of alloy AT3 with a lower content of alloying elements 16

SOURCE: Soveshchaniye po metallurgii, metallovedeniyu i primeneniyu titana i yego splavov. 5th, Moscow, 1963. Metallovedeniye titana (Metallography of titanium): trudy* soveshchaniya Moscow Izd-vo Nauka, 1964, 263-272

TOPIC TAGS: titanium alloy, titanium alloy heat treatment, titanium alloy mechanical property, hydrogen saturation, aluminum containing alloy/alloy AT3

ABSTRACT: Previous investigations have dealt with the heat treatment of normal AT3 alloys. This paper considers an AT3 alloy with a lower content of alloying elements, now being used for the production of cold-drawn pipes. The aim of this investigation was to determine the conditions of heat treatment yielding the best mechanical properties, and showing a sufficient difference between the yield point and ultimate strength. The AT3 test alloy contained 2.5% Al, 0.9% Cr+Fe+Si+B, 0.013% H_2, 0.013% N_2, and 0.06% C. The billets cut from the bars were tested as cut with air hardening at 750-1250C (every

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50C), alone or plus aging of the hardened alloys at 300 or 400C for 100 hours (see Fig. 1 of the Enclosure). The metal was held at 750-1100C for 1 hour and at 1150-1250C for 15 minutes. The differences observed between the yield point and ultimate strength are explained by the appearance of a β phase. Aging also affects this relationship. The alloys preserved high plasticity to a hardening temperature of about 850C, the highest resiliency being observed at 825-850C. Aging at 300-400C lowered the resiliency of forged samples, but did not affect the resiliency of alloys hardened at 800-850C. This shows the advantages of hardening. The effect of hydrogen saturation was also different when the aluminum content differed. Alloys with a low Al content (2.5%) became brittle at a low hydrogen content (about 0.008%). Increasing the aluminum content increased hydrogen solubility in the α phase or lowered the extrusion of hydrides, thus lowering the hydrogen diffusion coefficient in titanium. The effect of heat treatment was confirmed by metallographic analysis and rupture tests. The paper concludes that lowering the content of alloying elements in alloy AT3 leads to high plasticity and impact strength with higher mechanical properties after air hardening at 825-850C. The alloy hardened under these conditions has high thermal stability. The difference between the ultimate

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ACCESSION NR: AT4048084

strength and yield point (about 8 kg/mm^2) allows the AT3 alloy to be used after heat treatment, when there is a low content of alloying elements, for producing parts working under complex loading conditions. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 15Jul64 ENCL: 02 SUB CODE: MM

NO REF SOV: 005 OTHER: 001

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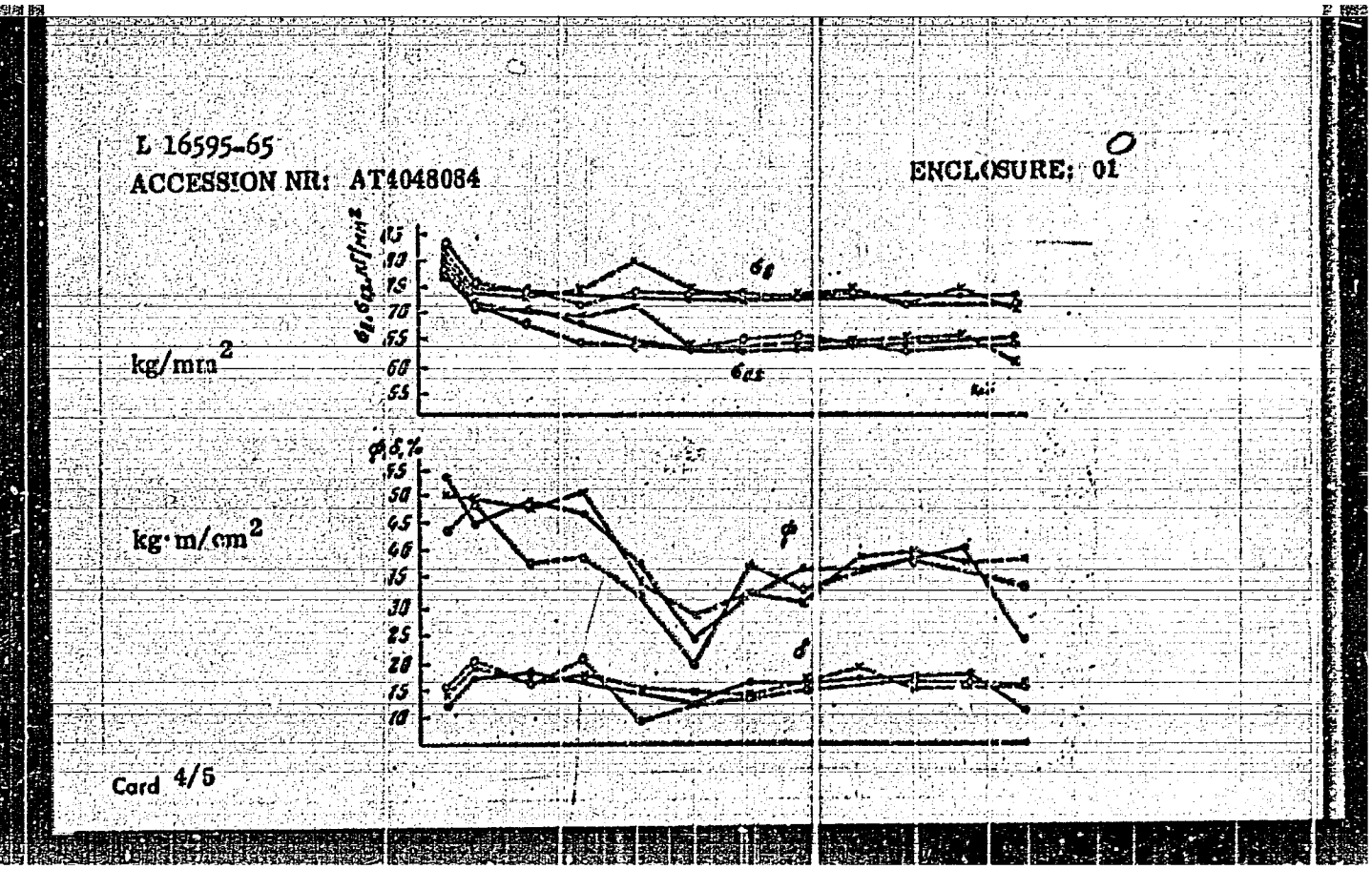
L 16595-65
ACCESSION NR: AT4048084

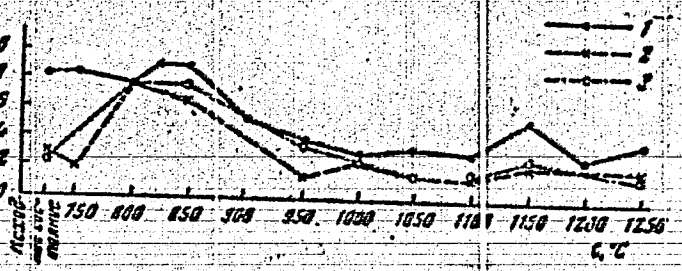
ENCLOSURE: 01



L 16595-65

ACCESSION NR: AT4048084

ENCLOSURE: 02



orig. condition

Fig. 1. Effect of hardening temperature on the mechanical properties of alloy AT3: 1. hardening plus cooling air; 2 - the same plus aging at 300C for 10⁰ hrs.; 3 - the same plus aging at 400C for 100 hrs.

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VUL'F, B.K.; YUDINA, S.A.

Dependence of the mechanical properties of AT-3, AT-4, AT-6 and AT-8 titanium alloys on their heat treatment. Titan i ego splavy no.10:207-213 '63. (MIRA 17:1)

KORNILOV, I.I.; VUL'F, B.K.; YUDINA, S.A.

Heat treatment of titanium alloys in a six-component system Ti - Al - Cr - Fe - Si - B. Metalloved. i term. obr. met. no.2:54-56 F '63. (MIRA 16:3)
(Titanium alloys—Heat treatment)

S/137/63/000/002/032/034
A006/A101

AUTHORS: Kontorovich, I. Ye., Vul'f, D. A., Sekey, A. G.

TITLE: On non-oxidizing heat treatment of a 1X18H9T (1Kh18N9T) steel strip using electric preheating

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1963, 121, abstract 2I693 ("Sb. tr. Mosk. vech. metallurg. in-ta", 1962, no. 4, 65 - 73)

TEXT: The authors established techniques for the non-oxidizing heat treatment of a 1Kh18N9T steel strip (excluding etching). It is recommended to preheat the strip for quenching (to 1,150 - 1,170°C) during 5 - 10 minutes in a muffle inductor with a transverse magnetic field in shielding atmosphere (argon) and to conduct subsequent quenching in a non-oxidizing atmosphere. Non-oxidizing heat treatment yields on the surface a very thin and dense passivating film, excludes metal loss during the formation of scale and etching. The use of non-oxidizing heat treatment with high-speed electric heating makes it possible to produce highly efficient automated continuous cold-rolling-heat treatment-lines. The economical profit of non-oxidizing heat treatment of the strip is confirmed by approximate technical and economical indices.

A. Babayeva

[Abstracter's note: Complete translation]

Card 1/1

TSEITLIN, Boris Viktorovich; NOVOSPASSKIY, V.Y., redaktor; VUL'F, D.A. redaktor; RAKOV, S.I., tekhnicheskiy redaktor

[Work safety in the process of the heat treatment of metals] Bezopasnost' pri protsessakh termicheskoi obrabotki metallov. [Moskva] Izd-vo VTsSPS Profizdat, 1955. 156 p. (MLRA 9:3)
(Metals--Heat treatment--Safety measures)

KONTOROVICH, I.Ye., prof., doktor tekhn.nauk; VUL'F, D.A., inzh.; SEKEY, A.G., inzh.

Direct electric heating of wire for patenting. Stal' 22 no.2: 179-180 F '62. (MIRA 15:2)
(Wire--Heat treatment)

Country : USSR
CATEGORY : General Problems of Pathology. Tumors. Comparative Oncology
ABS. JOUR. : RZBiol., No. 12 1958, No. 56544

AUTHOR : Vol'f, D.P.
INST. :
TITLE : Primary Cancer of the Middle Ear

ORIG. PUB. : Sb. Rabot Vrachey Kirovogradsk. Obl., 1957, No.1, 65-67

ABSTRACT : A case is described of cancer of the middle ear in a 48-year old patient. The disease followed the course of a chronic mesotympanitis complicated by mastoiditis. History revealed the presence of chronic otitis with manifestations in childhood. At mastoidectomy, granulation tissue was found which filled the entire mastoid process; histologic studies showed a squamous cell carcinoma. The patient was irradiated (total dose 3500 r). The granulation process subsided post-operatively and purulence abated. In 1 month the patient began to complain of severe headaches, purulent secretions from the ear, a tumor behind the ear,

CARD: 1/2

VUL'F, D.P.

Case of petrositis cured by penicillin. Vest.otorinolar. 13 no.1: 60-61 Jan-Feb 51. (CLML 20:5)

1. Of the Division of Ear,Throat, and Nose of the First Soviet Hospital (Head Physician--V.D.Novitskiy), Kirovograd, Ukrainian SSR.

VUL'F, GEORGIY VIKTOROVICH

Science.

Selected works in crystallophysics and crystallography. Moskva, Gos. izd-vo tekhniko-teoret., lit-ry, 1952.

9. Monthly List of Russian Accessions, Library of Congress, September 1953 Uncl.

VUL'F, IUrii Viktorovich, 1863-1925.

Selected works on crystallography and crystallophysics Redaktsiia, biografi-cheskii ocherk i primechaniia A. B. Klodzeevskogo. Moskva, Gos. izd-vo tekhn.-teoret. lit., 1952. 342 p. Biblioteka russkoi nauki

VUL'F, L.A., inzhener.

Improve record keeping in Moscow's municipal underground construction systems. Gor.khoz. Mosk. 29 no.12:15-17 D '55. (MLRA 9:3)
(Moscow--Municipal engineering)

VUL'F, L.A., insh.; LOSEV, I.G.

Moving underground telephone lines. Gor. khoz. Mosk 34 no.8:32-33 Ag '60. (MIRA 13:9)
(Moscow--Telephone lines)

VUL'F, Anatoliy Semenovich; VUL'F, Leonid Anatol'yevich; MOROZOV, I.A., red.; GUSHCHINA, R.N., red. izd-va; GRECHISHCHEVA, V.I., tekhn. red.

[How to make furniture yourself]Kak izgotovit' mebel' samomu. Moskva, Goslesbumizdat, 1962. 42 p. (MIRA 15:9)
(Furniture)

DAVIDYANTS, N.M.; VUL'F, L.A.; LYAMIN, A.A.

Economic problems of the construction of utility conduits for underground structures. Gor. khoz. Mosk. 35 no.11:18-23 N '61. (MIRA 16:7)
(Moscow--Underground construction)

ALISOVA, S.P.; VUL'F, L.B.; MARKOVICH, K.M.; PETROVA, L.A.; ROGACHEVSKAYA, Z.M.; AGEYEV, N.V., red.; SLUZHITEL', Ye.I., tekhn.red.

[Phase diagrams of metallic systems; published in 1956] Diagrammy sostoianiia metallicheskikh sistem; opublikovannye v 1956 godu. Pod red. N.V.Ageeva. Moskva. No.2. 1959. 102 p.
(MIRA 13:12)

(Alloys) (Phase rule and equilibrium)

PHASE I BOOK EXPLOITATION SOV/5612

Alisova, S. P., L. B. Vul'f, K. M. Markovich, P. K. Novik, L. A. Petrova, and Z. M. Rogachevskaya

Diagrammy sostoyaniya metallicheskikh sistem, opublikovannyye v 1955 godu. vyp. 1. (Equilibrium Diagrams of Metal [Alloy] Systems, Published in 1955. no. 1) Moscow, 1959. 135 p. Errata slip inserted. 1,500 copies printed.

Ed. (Title page): N. V. Ageyev; Tech. Ed.: N. M. Soboleva.

PURPOSE : This book is intended for metallurgists, scientific workers, and students engaged in the study of alloys and their properties.

COVERAGE: Equilibrium diagrams published in Soviet and non-Soviet literature in 1955 are arranged in sequence according to the number of component elements (binary, ternary, quaternary, etc.); within the groups, they are arranged in Russian alphabetical order according to the names of the components. The

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descriptions treat the following: 1) the alloys used in the investigations; 2) the methods of preparing and studying the alloys; 3) a description of the diagram with its points and lines; 4) description of the phase; 5) reference source; and 6) remarks. For binary systems the equilibrium diagram from the original article is given; for ternary and more complex systems, selected sections of the diagram are presented. If not otherwise indicated, the compositions are given in weight percentages and the temperatures in Centigrade. Abbreviations for the type of lattice are as follows: granetsentrirovannaya kubicheskaya (GTsK) reshetka -- face-centered cubic (FCC) lattice; ob"yemno-tsentrirovannaya kubicheskaya (OTsK) reshetka -- body-centered cubic (BCC) lattice; and geksagonal'naya plotno-upakovannaya (GPU) reshetka -- hexagonal closed-packed (HCP) lattice. No personalities are mentioned. There are 114 references: 56 English, 28 German, 28 Soviet, 1 French, and 1 Italian.

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13069

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Reorganization of Korosten' Depot of Southeastern Line from May to Aug 1947 is shown for organization and number of workers, i.e., machinist-preparation brigade - 18, boxcar group - 5, shaft group - 3, railroad-car group - 4, fittings - two groups of 2 and 4 workers, compound brigade - 22. Four principles considered important enough for incorporation in advanced methods of repairs are outlined. 13069

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